

cana, *Fagus ferruginea*, *Ostrya Virginica*, *Betula leuta*, *B. nigra*, *Salix lucida*, *S. discolor*, *Juniperus Virginiana* and *Pinus mitis*.

There still exists in the southern part of Indiana (especially in Pike, Dubois and Crawford counties) considerable actually "virgin" forest, in which probably the largest trees now growing in the State are to be found. During a recent trip through this country, over the line of the Louisville & St. Louis Air-Line R. R., I was much impressed with the magnificent growth of beech and other trees, growing densely as possible, and apparently untouched by the ax for miles along the railroad. Saw mills were already established in places, so the work of destruction has begun, and will doubtless continue as long as the material lasts.

Notes on Edible Plants. III.

BY E. LEWIS STURTEVANT.

ANONACEÆ.

This order contains a number of edible and often aromatic plants, and some are in esteem in their native countries, even to the European palate. In tropical Asia the perfumed fruit of *Uvaria Burahol*, Bl., *U. dulcis*, Dun., and *U. heterophylla*, Bl., are eaten (Baillon), in Burma, the fruit of *U. grandiflora*, which has the taste and the appearance of the North American Papaw (Pickering), and in Ceylon that of *U. Zeylanica*, of a vinous taste, and resembling that of an apricot (Don). In Jamaica *U. alba* is said by Lunan to have a fruit eaten when roasted, and in Jamaica *U. dulcis* is grown in the public gardens as a fruit tree (Morris); *U. cordata* is also enumerated amongst the edible species (Masters).

Guatteria cerasoides, Dun., of Western Hindustan, has dark red, cherry size, astringent fruit, eaten by the natives; and the black, fleshy, smooth, acid-sweet berries of *G. sempervirens*, Dun., are also eaten (Don).

The Unonias have aromatic properties. *U. carminativa*, Arrud. affords in the capsules of its seeds a spice relished as a pepper in Brazil (Arruda); *U. discreta*, L. fil. of Surinam, *U. dumetorum*, Dun., of Cochin China, *U. esculenta*, Dun. of India about Madras, have fruits said to be edible and of good taste (Don); those of *U. Corinthi* are also classed as edible (Baillon), and those of *U. undulata*, Dun., are used as a condiment in Guinea.

In the United States we have *Asimina triloba*, Dun., a tree common in the Southern portions, and even extending as far north as Western New York. Its oblong pulpy fruit, about 4 inches long, when ripe has a rich, luscious taste, offensive to many people, but relished by some. It is a natural custard, says Flint, "too luscious for the relish of most people. The fruit is nutritious, and a great resource to the savages." *A. glabra*, L., is found in South Florida, the fruit small and eatable when fully ripe (Vasey).

Monodora myristica, Dun. is cultivated in Jamaica, its fruit called Guinea or Calabash nutmegs, used by the negroes in cooking. It is a native of Africa (Baillon).

Quite a number of the genus *Anona* are cultivated for the sake of their fruits, as *A. asiatica*, L. of Ceylon (De Candolle) and grown for its fruit in Cochin-China (Unger); *A. Cherimolia*, Mill. of Peru, and its fruit in high esteem. The fruit, when ripe, is of a dark purple, the flesh soft and sweet, enclosing numerous seeds. Cultivated in all warm climates (Baillon), and introduced into Florida before 1877 (Am. Pom. Soc.); *A. cinerea*, Dun., of the West Indies (Don); *A. mucosa*, Jacq. of Martinique and Guiana, and cultivated in the Moluccas, although the fruit seems to be of an unpleasant taste (Don); *A. muricata*, Jacq., the sour sop of the West Indies and neighboring America, in general esteem, and even cultivated in Arabia (Baillon); *A. obtusifolia*, Tuss., cultivated in St. Domingo (Don); *A. reticulata*, L. of the West Indies, and cultivated also in Brazil, the East Indies and the Mauritius (Baillon); *A. squamosa*, L. of tropical America, and now introduced to Cochin-China, China, the Philippines and India. Other species, which are mentioned as bearing edible fruit, but which we have not seen mentioned as cultivated, are *A. chrysocarpa*, whose fruit is eaten in Senegal; *A. longifolia*, of Guiana and Trinidad, and whose fruit was much prized by the Caribs (Unger), and said to be excelled by Lindley; *A. Maregravii*, Mart. and *A. Pisonis*, Mart. of Brazil (Baillon); *A. paludosa*, Anbl. of Guiana (Unger); *A. palustris*, L., the alligator apple of the West Indies, and Cortissa of Brazil (Don); *A. punctata*, Anbl. of Cayenne, whose fruit is of good flavor and pleasant eating (Lindley); *A. Senegalensis*, Pers., which furnishes one of the best fruits of Sierra Leone, Senegal, and the banks of the Congo (Sabine); *A. sylvatica*, St. Hil. of Brazil (St. Hillaire); and *A. tripetala* of South America, esteemed by Lunan in Jamaica as a delicate fruit.

The genus *Xylopi*a has aromatic fruits, and the seeds of many species are used as a spice, as *X. Aethiopica*, A. Rich., the

Guinea pepper employed by the negroes from time immemorial; *X. aromatica*, used by the negroes of Guiana as a nutmeg; *X. frutescens*, used as a seasoner in Brazil (Baillon); *X. glabra* of Jamaica, pronounced by Browne as having an agreeable fruit; *X. grandiflora*, (Baillon), and *X. sericea*, St. Hil., whose seeds furnish a spice in Brazil (St. Hillaire).

The genus *Xylopia* seems to include edible species referred by some authors to the genera *Unona* and *Habzelia*.

BERBERIDEÆ.

This natural order includes a number of edibles of however slight importance.

Lardizabala biternata, Ruiz. et Pav. of Chili and Peru, has fruits which are sold in the markets, the pulp being sweet and of pleasing taste (Don); *Boquila trifoliata* also has edible berries about the size of a pea, eaten in Chili (Maout & Decaisne); and *Holboellia angustifolia*, Wall. of Nepal, and *H. latifolia*, Wall. of Sikkim, have mealy and insipid, yet edible, fruits.

Berberis aquifolium, Pursh. of Western North America, bears sour fruit, but not unpleasant to the taste (Howell); the juice when fermented makes, on the addition of sugar, a palatable and wholesome wine (Rothrock); *B. aristata*, D. C. of the mountains of Hindustan, has been introduced into European fruit gardens. It is said to yield purple fruits, which, in India, are dried like raisins and used at desert (Downing); *B. asiatica*, Roxb., has large ovoid or subglobose berries, red or black, which are eaten in the East Indies (Brandis); *B. buxifolia*, Lam. from Magellan's Straits to Chili, has comparatively large, black, hardy acid, slightly astringent fruit, eaten in Valdivia and Chiloe (Mueller); *B. Canadensis*, Pursh., of the Alleghanies of Virginia and southward, is a small shrub with red berries of an agreeable taste (Pursh.); *B. cristata* of Nepal furnishes fruits which are dried and sent down as raisins to the plains (Wight); *B. Darwinii* Hook. of Chiloe and South Chili, is grown in cottagers' gardens in England, and the fruit esteemed by children as equal to black currants (Gard. Chron.); *B. dulcis*, D. Don, probably the *B. buxifolia*, Lam., has ripened fruit in Edinburg, described as large and excellent (Downing); *B. glumacea*, Spreng. is abundant in spruce forests in Oregon, the fruit blue, acid, but eatable (Newberry); *B. heteropoda* is an edible barberry from Turkistan, and is growing in the Experimental collection of the University of California (Hilgard); *B. lycium* has fruit which in China is preserved, and whose young shoots and leaves are used as a vegetable, or for infusion as a tea (Smith); *B. Nepalensis*, Spreng. of

the Himalayas, is an evergreen species with edible fruit which, dried as raisins, is sent down to the plains for sale (Royle); *B. nervosa*, Pursh., is an Oregon species with edible fruit (Howell); *B. pinnata*, Benth. in New Mexico, has blue berries of pleasant taste, sweet with a slight acidity (Bigelow); *B. repens*, Lind., is common in Utah, where its fruit is highly prized (Jones), and is made into confections and freely eaten (Lloyd); *B. trifoliata*, Gray, of Western Texas, has red acid berries, used for tarts (Torrey); *B. vulgaris*, L. was early introduced into the gardens of New England, and increased so rapidly that in 1754 the Province of Massachusetts passed an act to prevent damage to wheat arising from its presence in the vicinity of grain fields. The leaves were formerly used to season meats with in England (Gerarde); and its fruit is now used for preserves. A stoneless variety is sometimes found. There are four kinds known, the common red, large red, purple and white (Bucke). A black fruited variety is said by Tournefort to occur on the banks of the Euphrates and to be of a delicious flavor. *Bongardia Rauwolfi*, C. A. Meyer, occurs from Greece to the Caucasus. The Persians roast or boil the tubers, and eat the leaves as sorrel (A. A. Black). *Nandina domestica*, Thunb., is a handsome evergreen shrub of China and Japan, and extensively cultivated for its fruit, which are red berries of the size of a pea (Don). *Podophyllum callicarpum*, Raf., is said by Robin and Rafinesque, in their Flora of Louisiana, to have fruit the size of a large filbert, sweet, good to eat, and of which preserves are made; *P. emodi*, Wall. of India, has edible berries, but tasteless (Hooker & Thomson); *P. peltatum*, L., is the May apple, the mawkish fruit eaten by pigs and boys (A. Gray), relished by many persons (Porcher), extremely delicious to most persons (Barton), a pleasant fruit (Newport), but to our taste mawkish and disagreeable.

Forestry Notes.

BY F. L. HARVEY.

Catalpa speciosa, Warder. The distribution of *Catalpa speciosa* is of considerable interest, as it has been the belief of botanists that it is not found native west of the Mississippi river north of the Louisiana line. In a former number of the GAZETTE we gave an account of fine specimens, four feet in diameter, growing in the hotel yard, and in the grounds of Judge A. B. Williams at Washington, Hempstead county. If one was not informed that the seeds were introduced from Louisiana he